

# The Defense Industry In Kentucky



**May 2008**  
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## I. INTRODUCTION

### Defense Industry

#### *Overview*

The defense industry in Kentucky is a small but growing sector which consists primarily of companies engaged in the production of explosives, ordnance, aircraft and guided missiles and their associated components and armor related products as well as Department of Defense contractors. Much of the federal government's defense industry data is broken down at the company rather than the state or county levels. Fortunately, Kentucky has agencies that monitor economic activities within the Commonwealth and therefore, a great deal of data concerning the defense industry within the state may be derived from sources other than that gathered at the national level. With the rise of spending in the defense related industries due to increased national and foreign demand, Kentucky has many competitive strong points that will allow it to position itself to take advantage of this growing trend.

As of April 2008, Kentucky had 21 facilities employing 3,868 people in the defense industry. L-3 Communications Integrated Systems, a Department of Defense contractor located in Lexington, is the states largest defense industry employee with over fourteen hundred employees.

Kentucky is nearly equidistant from the Great Lakes, the Gulf of Mexico and the Atlantic Seaboard. That makes the state an excellent distribution point for defense industry companies shipping to customers in both northern and southern locations.

The list of NAICS codes (See Table 1) chosen by the Kentucky Cabinet for Economic Development for the defense industry includes fourteen (14) six digit codes. These codes, while encompassing many, but not all, of those associated with the defense and aerospace industries, will be the focus of this report. All indices, tables, and other information listed in this report will reflect data concerning only these codes.



2002 NAICS Code	INDUSTRY
325920	Explosives Manufacturing
332992	Ordnance & Accessories Manufacturing - Small Arms Ammunition Manufacturing
332993	Ordnance & Accessories Manufacturing - Ammunition (except Small Arms) Manufacturing
332994	Ordnance & Accessories Manufacturing - Small Arms Manufacturing
332995	Ordnance & Accessories Manufacturing - Other Ordnance and Accessories Manufacturing
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing
336411	Aircraft Manufacturing
336412	Aircraft Engine and Engine Parts Manufacturing
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing
336414	Guided Missile and Space Vehicle Manufacturing
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing
927110	Space Research and Technology

Table 1: Bureau of Labor Statistics R&D Intensive High Technology Industries converted to NAICS.

Table 1: Rankings for Kentucky and Competitor States--2005  
Kentucky's Defense Related Industries (NAICS 33299 and 3364)

Competitor States	Total Employees (1)		Estimated Annual Wage		Total Business Establishments	
	Total Jobs	Rank	Wage	Rank	Establishments	Rank
<b>United States</b>	<b>528,781</b>	<b>-</b>	<b>\$ 60,003</b>	<b>-</b>	<b>6,598</b>	<b>-</b>
Alabama	8,373	19	\$ 44,354	26	97	23
Arkansas	6,056	25	\$ 44,264	27	65	31
Georgia	19,195	8	\$ 55,283	14	148	16
Illinois	15,324	9	\$ 49,851	23	276	7
Indiana	14,083	10	\$ 54,204	16	185	11
<b>Kentucky</b>	<b>1,349</b>	<b>36</b>	<b>\$ 58,938</b>	<b>10</b>	<b>80</b>	<b>27</b>
Michigan	11,636	14	\$ 45,797	25	353	4
Mississippi	334	39	\$ 41,018	33	22	42
Missouri	9,398	16	\$ 36,598	39	95	24
North Carolina	6,718	23	\$ 48,224	24	123	20
Ohio	27,187	6	\$ 57,986	12	409	3
South Carolina	10,106	15	\$ 39,898	35	78	28
Tennessee	6,968	21	\$ 43,015	28	121	21
Virginia	4,534	27	\$ 50,355	19	80	26
West Virginia	1,738	34	\$ 50,912	18	24	41

Source: Data derived from the United States Census Bureau, County Business Patterns 2005.

Note: A ranking of one (1) is the highest ranking nationally. Note: All data is NAICS based (33299 and 3364). Note: The Number of Employees estimate is based on survey data for the week including March 12, 2005. Note: Not all data is available so information is incomplete.

## II. ECONOMIC IMPACT

The export data for Kentucky's defense industry sector is incomplete and cannot be accurately estimated for 2005, but the majority of its exports fall into two different three digit NAICS codes (332 and 336). In 2006, Kentucky exported \$495,658,837 in fabricated metal products (NAICS 332), and this included a great many defense related products. The same year the state exported \$6,705,903,838 in transportation equipment and this also included a large amount of defense industry related products.

Source: "Origin of Movement Series," Massachusetts Institute of Social and Economic Research, University of Massachusetts.

During that same year, the Commonwealth exported nearly \$2.8 billion in jet engine parts of which nearly \$1.3 billion or 46% of these parts were exported to France alone. The United Kingdom and Brazil round out the top three nations to which Kentucky exports these engine parts. Together those three nations account for about 75% of Kentucky's exports of those commodities (See Table 2).

**Table 2: Kentucky's Exports of Defense Industry Commodities (Jet Engines) Top 15 Countries-- Annual 2006**

Country of Destination	Turbojet and Turbopropeller Parts
<b>All Countries</b>	<b>\$ 2,779,718,913</b>
FRANCE	\$1,267,658,022
UNITED KINGDOM	\$ 522,250,920
BRAZIL	\$ 298,224,850
SINGAPORE	\$ 189,852,337
CANADA	\$ 125,203,488
GERMANY	\$ 93,935,211
NETHERLANDS	\$ 93,232,116
MALAYSIA	\$ 70,051,175
HONG KONG	\$ 25,656,288
AUSTRALIA	\$ 18,430,876
ITALY	\$ 16,197,453
JAPAN	\$ 15,594,549
UNITED ARAB EMIRATES	\$ 9,476,731
IRELAND	\$ 7,662,717
HUNGARY	\$ 7,163,671

Source: "Origin of Movement Series," Massachusetts Institute of Social and Economic Research, University of Massachusetts. Economic Impact data produced by the Kentucky Cabinet for Economic Development.

Since codes are three digits, it may contain some non-advanced manufacturing data.

**Table 3: Kentucky's Defense Industry (2005)**

<b>Employees (1)</b>	<b>1,299</b>
<b>Average Annual Salary (2)</b>	<b>\$50,351</b>
<b>Number of Business Establishments (3)</b>	<b>26</b>

Sources:

1, 2. Data derived from the United States Census Bureau, County Business Patterns 2005.

Note: All data is NAICS based (32592, 33299 and 3364).

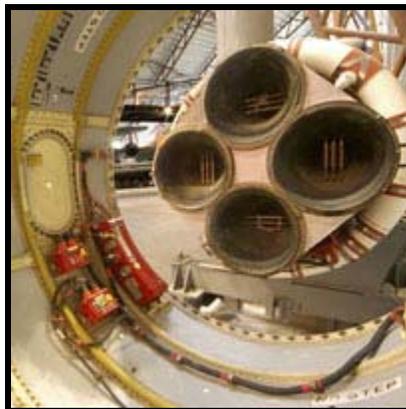
3. Data derived from the United States Census Bureau, County Business Patterns 2005.

Note: All data is NAICS based (32592, 33299 and 3364).

**Major Defense Industry Employers in Kentucky (100 or more employees  
April 2008 Data)**

<b>Facility Name</b>	<b>Employment</b>
L-3 Communications Integrated Systems	1,412
GE Aircraft Engine Division	824
Raytheon Company	343
BAE Systems Armament Systems Division	295
MPD, Inc.	264
Ensign-Bickford Aerospace and Defense	132
Messier-Bugatti USA LLC	115

Source: Kentucky Cabinet for Economic Development



**Table 4: Composition of Kentucky's Defense Industry--2005**

NAICS (1)	Industry Description	Number of Employees (2) (3)	Estimated Annual Wage (3)	Total Business Establishments
325920	Explosives Manufacturing	242	\$ 50,351	6
332992	Small Arms Ammunition Mfg.	0-19	N/A	2
332993	Ammunition (except Small Arms) Manufacturing	100-249	N/A	1
332994	Small Arms Manufacturing	100-249	N/A	4
332995	Other Ordnance and Accessories Manufacturing	250-499	N/A	2
336411	Aircraft Manufacturing	0-19	N/A	2
336412	Aircraft Engine and Engine Parts Manufacturing	500-999	N/A	5
336413	Other Aircraft and Auxiliary Equipment Manufacturing	0-19	N/A	3
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	250-499	N/A	1

Source: Data derived from the United States Census Bureau, County Business Patterns 2005.

1. Note: All data is NAICS based.
2. Note: The Number of Employees estimate is based on survey data for the year ending December 31, 2005.
3. Note: NAICS data incomplete for most codes and no data is available for the following codes: 334511, 336414, 336415, 336992, and 927110.

### III. INDUSTRY RESOURCES

#### **Bluegrass State Skills Corporation**

The Bluegrass State Skills Corporation (BSSC), [www.thinkkentucky.com/bssc/](http://www.thinkkentucky.com/bssc/), was established in 1984 by the Kentucky General Assembly as an independent, de jure corporation to stimulate economic development through programs of skills training. The Bluegrass State Skills Corporation promotes and improves employment opportunities for Kentucky's residents. BSSC creates partnerships with businesses and industries through training grants and investment credits for skills training programs. BSSC is attached to the Cabinet for Economic Development for administrative purposes and in recognition of the relationship between economic development and skills training efforts.

#### **Defense News**

*Defense News* and its web site, [DefenseNews.com](http://DefenseNews.com), are part of the Army Times Publishing Company, the leading military and government news periodical publisher in the world. The defense business-to-business unit of the Army Times Publishing Company is called the Defense News Media Group which also

produces the *Federal Times*, the leading newsweekly for federal government managers, covering key management issues within all U.S. government departments and agencies. Defense News Customer Service, 6883 Commercial Drive, Springfield, Virginia 22159. Telephone: 800-368-5718

### **GE Aviation**

Headquartered in Cincinnati, Ohio, GE Aviation is the world's leading producer of large and small jet engines for commercial and military aircraft. It also supplies aircraft-derived engines for marine applications and provides aviation services.

111 Merchant Street, Cincinnati, OH 45246; Telephone (877) 432 – 3272,  
[www.geae.com](http://www.geae.com).

### **Kentucky Procurement Assistance Program (KPAP)**

KPAP offers free assistance to Kentucky businesses interested in marketing their products and/or services to government agencies. Their services include marketing, training, consulting and providing eProcurement seminars and price histories.

Kentucky Cabinet for Economic Development, Old Capitol Annex, 300 West Broadway, Frankfort, KY 40601. Telephone: 800-626-2930.

### **L-3 Communications Integrated Systems, Inc.**

L-3 Communications is the sixth largest defense company in the United States, and is a leader and prime defense contractor in Intelligence, Surveillance and Reconnaissance (ISR), secure communications, government services, training and simulation and aircraft modernization and maintenance. The company also is a leading merchant supplier of guidance and navigation products and systems, sensors, scanners, fuses, data links, propulsion systems, avionics, electro optics, satellite communications, electrical power equipment, encryption products, signal intelligence, antennas and microwave products.

600 Third Avenue, New York, NY 10016, Phone: (212) 697-1111, Fax: (212) 805-5477, [www.L-3Com.com](http://www.L-3Com.com).

### **National Defense Industrial Association (NDIA)**

The National Defense Industrial Association (NDIA) is America's leading Defense Industry association promoting National Security. NDIA traces its history to the American Defense Preparedness Association (ADPA), founded in 1919, and the National Security Industrial Association (NSIA), founded in 1944. The new NDIA founded in March 1997 is a non-partisan, non-profit, educational association with offices in Arlington, Virginia.

2111 Wilson Blvd., Suite 400, Arlington, VA 22201, Telephone: (703) 522-1820, Fax: (703) 522-1885, [www.ndia.org](http://www.ndia.org).

## **University of Kentucky Center for Manufacturing**

University of Kentucky, College of Engineering, Phone: (859) 259-6262, Fax: (859) 323-1035. <http://www.mfg.uky.edu>

Established in 1986 by the Commonwealth of Kentucky as the Center for Robotics and Manufacturing Systems, the Center for Manufacturing is the premier source of manufacturing technological assistance for Kentucky's industries, providing service to approximately 350 companies, entrepreneurs, and agencies annually. The center conducts manufacturing research, transfers manufacturing technology to industry, and supports educational efforts in manufacturing. Currently funded with an annual recurring budget of \$2.6 million, the Center generates external funding to support its research activities from federal and state agencies, foundations, and corporations. Since 1993, the center has received \$3.65 million in grants and contracts.

## **IV. BUSINESS CLIMATE**

Kentucky offers a wide range of opportunities for a profitable investment in all business sectors. Kentucky's manufacturing base has shown particularly dramatic growth during the past decade. Kentucky ranked 10th in the 2007 *Site Selection* Governor's Cup awarded annually to U.S. states with the most new and expanded facilities. *Site Selection* also ranked Kentucky 10th in the magazine's list of states with the most new and expanded facilities from 2005 to 2007. Kentucky has a strong industrial base driven by massive resources of water, low-cost electric power, and reasonably priced barge, rail, and truck transportation.

- Kentucky ranked 6<sup>th</sup> among the states in the annual *Site Selection* Competitiveness Award for 2006, according to the May 2007 issue of the magazine. The Competitiveness Award is based on 10 quantifiable criteria for measuring business expansion activity.
- *Site Selection* magazine ranks Kentucky 8th among the states for overall business climate (November 2006).
- Kentucky ranked 9<sup>th</sup> in the 2007 *Top States with Most Top Metros with 6* (*Site Selection*/March 2008).
- Six Kentucky communities ranked in *Site Selection's Top 100 U.S. Micropolitans* for new and expanded facilities in 2007. The communities are Glasgow (T28), Paducah (T28), Danville (T38), Frankfort (T62), Madisonville (T62) and Mayfield (T62). This tied Kentucky for fifth in the survey. (*Site Selection*, March 2008).

- Kentucky ranked 10th in the 2007 *Site Selection* magazine list of states with the most new and expanded facilities. Kentucky has the smallest population of any of the states in the top 10. (*Site Selection*, March 2008).
- Kentucky's industrial power costs are 2nd lowest when compared to the states east of the Mississippi River and are over 34% lower than the U.S. average. (Source: Energy Information Administration/Electric Power Annual 2006).
- Kentucky ranked tied for 2<sup>nd</sup> in the 2007 *Site Selection* magazine list of top states with expanded manufacturing facilities in 2007. (*Site Selection*, March 2008).
- In its 2006 survey, the [Center for Digital Government](#) ranks Kentucky as the number eight most digitally-advanced state government in the nation. The [Digital States Survey](#) is a comprehensive study that examines best practices, policies, and progress of state governments in their use of digital technologies to better serve citizens and streamline operations. The survey contains more than 70 measurements in four areas: service delivery, architecture and infrastructure, collaboration, and leadership.
- Kentucky's airports can compete with any in the world. According to *Airports Council International*, the Louisville International Airport ranks as the 3<sup>rd</sup> busiest cargo airport in North America and 9<sup>th</sup> busiest in the world (August, 2007).
- Kentucky is located in the center of eastern U.S. industrial and consumer markets, with its borders within 600 miles of 60% of the nation's population, personal income, and manufacturing business establishments. The population center of the United States east of the Rocky Mountains is located just northeast of Danville, Kentucky.
- Kentucky is at the highway crossroads of the Canada to Florida I-75 route, extending from the Great Lakes to the Gulf of Mexico, and the St. Louis to Norfolk I-64 route, which stretches from the Mississippi River to the Atlantic Seaboard.
- The [Reason Foundation](#) ranked Kentucky's highways as the 12th most efficient in the nation in its 16th Annual Performance of State Highway Systems report. The cost effectiveness for each state is computed by averaging its 12 performance ratios (ratio of each state's statistic to the national average, for 5 financial measures and 7 condition measures), then ranking the states. The report was released in June, 2007 and compared the state highway systems from 1984 to 2004.

- Kentucky has some of the most innovative business development programs in the nation to encourage business investments and expansions, including a wide range of tax incentives and financing. *Site Selection's* rankings of Kentucky among the topmost states in job creation for the last several years support Kentucky's position as an attractive state for both new and expanding business.
- In 2005, Kentucky modernized its tax structure to make it more business friendly. It lowered its top corporate tax rate from 8.25% to 6.0%. It eliminated the intangible and franchise taxes.
- Kentucky has the fifth lowest overall cost of doing business in the eastern United States according to the economist with Economy.com. The *North American Business Cost Review – 13<sup>th</sup> Edition*, updated in May 2007, measures the cost of doing business within a state for unit labor cost, tax burden, and energy cost. Kentucky ranks as the 13th lowest overall cost of doing business nationally.
- *Expansion Management* magazine's August 2007 issue ranked Kentucky's Workforce Training Programs, which includes the Bluegrass State Skills Corporation (BSSC), 5<sup>th</sup> in the nation. For the fifth consecutive year, Kentucky has ranked in the top ten, placing 8<sup>th</sup> in 2006, 3<sup>rd</sup> in 2005, 5<sup>th</sup> in 2004 and 8<sup>th</sup> in 2003. The ranking considered the programs' efforts in facilitating customized business and industry training services for new, expanding and existing companies. Programs were judged in terms of financial value, ease of usage and applicability.



**Table 5: Competitor States Business Cost: 2005**

Kentucky's Competitor States	Overall Rank		Unit Labor Cost		Energy Index		State & Local Taxation	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank
<b>United States</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>
Alabama	97	26	99	31	85	22	75	1
Arkansas	89	5	91	11	75	11	95	24
Georgia	95	21	97	24	91	26	91	13
Illinois	101	35	102	42	88	23	96	24
Indiana	89	5	91	11	77	12	91	13
<b>Kentucky</b>	<b>92</b>	<b>13</b>	<b>97</b>	<b>24</b>	<b>67</b>	<b>3</b>	<b>91</b>	<b>13</b>
Michigan	103	40	105	46	95	32	102	36
Mississippi	92	13	92	15	98	33	92	16
Missouri	93	16	96	21	72	5	86	7
North Carolina	85	2	82	2	84	18	93	20
Ohio	100	30	99	31	91	26	113	46
South Carolina	93	16	97	24	84	18	92	16
Tennessee	89	5	89	8	84	18	79	3
Virginia	93	16	97	24	73	8	87	9
West Virginia	96	23	95	20	66	2	122	49

Source: Derived from data provided by the *North American Business Cost Review*, 2006 Edition, Prepared by Economy.com, Inc.--Updated May 2007. Note: A ranking of 1 represents the best condition = lowest business cost.



## V. FACILITIES

Facility Name	Product Description	Employment
<b>Danville</b>		
Aircraft Braking Systems, Corp.	Carbon brake discs for the airline industry	34
<b>Dawson Springs</b>		
Mine Equipment & Mill Supply	Explosives	65
<b>Erlanger</b>		
Meyer Tool, Inc., Cox Plant	Precision aircraft parts	75
<b>Graham</b>		
Ensign-Bickford Aerospace and Defense	Explosives and energetic systems	132
<b>Hebron</b>		
GE On Wing Support Division	Aircraft engine maintenance and repair to any location worldwide 24 hours a day, 365 days a year.	25
<b>Hickory</b>		
Remington Arms Co., Inc.	Manufacture of rimfire and centerfire firearms	85
<b>Lexington</b>		
L-3 Communications Integrated Systems	Support activities – Department of Defense contractor	1,412
Point Six, Inc.	OEM computer prototypes and printed circuit board design; electronics subassemblies; sensing and temperature devices	17
<b>Louisville</b>		
BAE Systems Armament Systems Division	Defense systems and missile launchers	295
Raytheon Company	Naval ship self-defense weapon systems overhaul, repair and manufacture new ship self defense systems	343
<b>Madisonville</b>		
GE Aircraft Engine Division	Aircraft engines, turbines, blades and vanes	824
Scott Heavy Equipment, Inc.	Structural steel fabrications, conveyor structure, land mine clearing blade system and government contracting and manufacturing	5
<b>McKee</b>		
Phoenix Products, Inc.	Metal and composite products for the military and upholstery products	17
<b>Morgantown</b>		
Dynastrosi Laboratories LLC	Manufacture wind turbines, R&D and prototyping	4
<b>Owensboro</b>		
MPD, Inc.	Commercial tubs and components, microwave and police radar equipment, breath analyzers, ceramics and ceramic to metal seals	264
MPH Industries, Sub. MPD, Inc.	Radar equipment	55
<b>Somerset</b>		
Progeny Systems Corporation	Engineer and manufacture Department of Defense equipment – remote monitoring sensor system	24 (Announced)
Summit Aviation, Inc.	Manufacture, modify and fabricate aviation components	7
<b>Stanton</b>		

Stantek LLC	Toner cartridge remanufacture, electronic assemblies, welding, wire harness and warehousing	42
<b>Walton</b>		
Messier-Bugatti USA LLC	Airplane brake disc manufacturing and refurbishment and airplane wheel assemblies	115
<b>Wilder</b>		
Andrews Laser Works Corp.	Provider of laser processing, metal stamping, welding, fabrication, and machining services and a manufacturer of jet engine components.	52

Source: Kentucky Cabinet for Economic Development, April 2008 Data.